

REMARKS

Applicants have received and carefully reviewed the Final Office Action dated July 14, 2003 and the Advisory Action dated September 24, 2003 with regard to the present application. With the above amendments, claim 22 is now cancelled without prejudice and claim 29 is newly presented, such that claims 1-21 and 23-29 remain pending. Reexamination and reconsideration are respectfully requested.

In paragraph 1 of the Final Office Action, the Examiner rejected claims 1-4, 6, 11, 13-15 and 17 under 35 U.S.C. §102(b) as being anticipated by Webster, Jr., U.S. Patent No. 5,057,092. After careful review of the cited reference, Applicants respectfully disagree.

The Examiner has cited Figure 2 of the Webster, Jr. reference. Webster, Jr. describes the process of fabrication:

The reinforcing mesh is made by a conventional braiding process. In such a process, the braid members are interwoven, under tension, around the inner wall. The outer wall is then applied by dipping, spraying, extrusion or any other suitable process.

Webster, Jr., at column 3, lines 7-11. Webster, Jr. shows in Figure 2 that a number of axial members 28 are braided into a braid including helical members 26. The interweaving of the axial and helical members together causes the axial members 28 to sometimes be entirely on the outside of the braid, where the axial members are directly against the outer polymer layer of the catheter, and at other locations, the axial members are entirely on the inside of the braid, so the axial members are directly pressed against the inner polymer layer. At these locations, the axial members will be subject to adhesion with either the inner or outer layer along a relatively long axial distance. Therefore, at these locations, an axial member is likely to become strongly adhered to the outer or inner polymer layer, depending on whether the axial member is forced to the outside or the inside.

Previously, Applicants have argued based on the meaning of the word "between" in the claims. With the above amendments, Applicants have added further structural definition to the intended meaning of the term "between." Applicants now recite in claim 1 a device including an axial member disposed between the helical members such that the axial member is always disposed over the first helical member when the axial member crosses the first helical member, and beneath the second helical member when the axial member crosses the second helical

member. This structural limitation interrupts the relatively long axial distances along which the axial member is in contact with one or the other of the inner or outer polymer layers. Because Webster, Jr. suggests braiding the axial members into the overall braid, this recited structure is missing from the reference. By braiding the axial and helical members in a conventional braid, Webster, Jr., constructs a catheter having less flexibility as noted, for example, at column 3, lines 1-6.

Webster, Jr., fails to disclose a reinforcement layer comprising a tubular braid having a first helical member interwoven with a second helical member and an axial member disposed between the first helical member and the second helical member such that the axial member is always disposed over the first helical member when the axial member crosses the first helical member, and beneath the second helical member when the axial member crosses the second helical member. Instead, Webster Jr. discloses weaving the axial member into the braid.

Therefore, Applicants assert that claim 1 is clearly patentable over Webster, Jr.

In light of the above remarks and because the claims include new recitations of distinct elements, Applicants assert that dependent claims 2-4, 6 and 11, which depend from claim 1, are now patentable over Webster, Jr.

Independent claim 13 recites a catheter including a reinforcement layer comprising a tubular braid having a first helical member interwoven with a second helical member and an axial member disposed between the first helical member and the second helical member such that the axial member always crosses over the first helical member and under the second helical member. This structure is, in a fashion quite similar to that of claim 1, not disclosed by Webster, Jr. Therefore, Applicants assert that independent claim 13 and dependent claims 14, 15 and 17 are also clearly patentable over Webster, Jr.

In paragraph 2 of the Final Office Action, the Examiner rejected claims 5, 7-8, 16 and 18 under 35 U.S.C. §103(a) as being anticipated by Webster, Jr., in view of Stinson, U.S. Patent No. 5,891,191. After careful review of the cited references, Applicants respectfully disagree.

Webster, Jr., has been discussed above. Applicants note that each claim rejected under the combination of Webster, Jr., in view of Stinson, incorporates the recitations of either claim 1 or 13, each of which is believed patentable over Webster, Jr., at least because Webster, Jr., fails to disclose a reinforcement layer as recited in either claim. The Examiner appears to have cited Stinson to suggest the use of monofilaments. While Applicants reiterate that one would not find

it obvious to use materials used in a stent to construct a reinforcement layer for a catheter, as the devices have distinct purposes and must overcome different difficulties, Applicants also note that Stinson does not appear to suggest, and the Examiner has not stated that Stinson does suggest, reinforcement members as recited in either of claims 1 or 13. Therefore, Applicants assert that both claims 1 and 13 are patentable over Webster, Jr., in view of Stinson.

Because the independent claims (1 or 13) from which claims 5, 7-8, 16 and 18 each depend are patentable over the cited combination, claims 5, 7-8, 16 and 18 are all clearly patentable over Webster, Jr., in view of Stinson.

In paragraph 3 of the Final Office Action, the Examiner rejected claim 12 under 35 U.S.C. §103(a) as being unpatentable over Webster, Jr. in view of Ken et al., U.S. Patent No. 5,749,891. Upon close review of the cited references, Applicants respectfully disagree.

Webster, Jr., is discussed above particularly noting that claim 1 is patentable over Webster, Jr. Applicants, again, do not believe that one of skill in the art would find it obvious to rely on materials used in a vaso-occlusive coil to construct a catheter reinforcement layer, the devices having distinct purposes and encountering very different difficulties. Applicants also note that Ken et al. do not appear to include suggestions for axial members placed between the helical members of the vaso-occlusive coils.

In light of the above, Applicants assert that independent claim 1 is patentable over Webster, Jr. in view of Ken et al. Therefore, Applicants also assert that dependent claim 12 is clearly patentable over Webster, Jr., in view of Ken et al.

In paragraph 4 of the Final Office Action, the Examiner rejected claims 9-10, 19-21 and 23-28 under 35 U.S.C. §103(a) as being unpatentable over Webster, Jr., in view of Martin et al., U.S. Patent No. 6,361,637. After careful review of the cited references, Applicants respectfully disagree.

Webster, Jr., is discussed above particularly noting that Webster, Jr., does not suggest or disclose a reinforcement member as recited in either of claims 1 or 13. Claims 23 and 25 both recite catheters including reinforcement layers comprising a tubular braid having a first helical member interwoven with a second helical member and an axial member disposed between the first helical member and the second helical member such that the axial member does not cross beneath the first helical member or over the second helical member. Again, referring to Figure 2 of Webster, Jr., as well as the above noted portions of the specification of Webster, Jr.,

Applicants note that Webster, Jr. discloses braiding the axial member in with the braid of the helical members. This structure is not only distinct, but has different properties than the structure which is recited in claims 23 and 25 as noted throughout the present Application. Therefore both of claims 23 and 25 are patentable over Webster, Jr., standing alone.

Claim 28 recites a catheter including a reinforcement layer comprising a tubular braid having a first helical member interwoven with a second helical member, the first helical member defining a portion of a first helical member layer extending the length of the tubular braid, the second helical member defining a portion of a second helical member layer extending the length of the tubular braid, and an axial member positioned between the first helical member layer and the second helical member layer such that the axial member always crosses over the first helical member and under the second helical member. Again, for reasons similar to those given above for claims 23 and 25, claim 28 is patentable over Webster, Jr., standing alone.

Martin et al. appear to suggest a kink-resistant stent-graft. Applicants again question whether anyone of skill in the art would look to a stent-graft device to find materials or constructions for use in making a reinforcing layer for a catheter shaft, the devices having distinct purposes and encountering distinct difficulties. However, Applicants note that the Examiner has only cited Martin et al. for the purpose of illustrating the provision of a liquid crystal polymer monofilament in a flat ribbon. Applicants also note that Martin et al. do not appear to suggest the provision of any axial members in their stent, instead using radially disposed ribbons that are axially spaced from one another, for example, in Figure 1B, which shows ribbons 23 radially disposed with an axial spacing 24 therebetween.

In light of the above, Applicants assert that independent claims 1, 13, 23, 25 and 28 are clearly patentable over the cited combination. Therefore, Applicants likewise assert that dependent claims 9-10, 19-21, 23, 26 and 27 are clearly patentable over Webster, Jr., in view of Martin et al.

Newly presented claim 29 recites an elongate medical device comprising a reinforcing layer, the reinforcing layer including a first member and a second member forming a braid, with an axial member disposed within the reinforcing layer between the first member and the second member such that the axial member always crosses over the first member and under the second member. It is believed that claim 29 is also in condition for allowance.

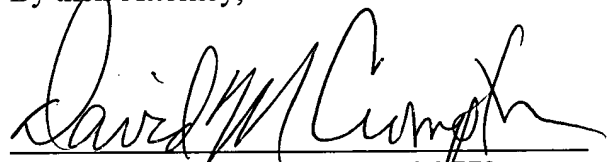
Reconsideration, reexamination, and allowance of all pending claims 1-21 and 23-29 are respectfully requested. Issuance of a notice of allowance in due course is respectfully requested. If a telephone conference might be of assistance, please contact the undersigned attorney at (612) 677-9050.

Respectfully submitted,

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By their Attorney,

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